

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)	
)	
Proposed Changes in the Commission's Rules)	
Regarding Human Exposure to)	ET Docket No. 03-137
Radiofrequency Electromagnetic Fields)	

NOTICE OF PROPOSED RULE MAKING

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I. INTRODUCTION

1. By this action, we propose to amend Parts 1 and 2 of our rules relating to the compliance of FCC-regulated transmitters and facilities with our guidelines for human exposure to radiofrequency (RF) energy. Our proposals are intended to ensure that the public is appropriately protected from any potential adverse effects from RF exposure as provided by the exposure limits in our rules, while avoiding any unnecessary burden in complying with our RF exposure rules. The Commission originally adopted rules for protecting workers and members of the public from potentially harmful exposure to RF energy almost twentyseveral years ago, and we have, on occasion, updated our rules as more relevant information has become available. The potentially harmful effects of RF energy are well characterized as the result of excessive heating of biological tissue. While transmitters and devices regulated by the Commission typically would not result in levels of exposure high enough to cause such injury, it is nevertheless important to ensure that human exposures are maintained well below levels that are suspected to be even potentially harmful. To achieve this, we are proposing modifications in those rules to provide more efficient, practical, and consistent application of compliance procedures.. More specifically, we are proposing to: 1) revise and harmonize the criteria for determining whether transmitters used in a number of services are subject to routine evaluation for compliance with the RF exposure limits or are categorically excluded from such evaluations; 2) clarify the procedures for evaluating RF exposure from mobile and portable devices, including modular transmitters; 3) add more specific definitions and compliance procedures relating to RF exposure of workers (occupational exposure); 4) develop consistent labeling requirements to ensure the compliance of certain types of RF devices; 5) consider certain issues related to spatial averaging of exposure, including how to account for localized exposures whose spatial peak measurements might exceed the exposure limits; 6) make certain changes in our rules to eliminate inappropriate references or to make evaluation procedures consistent and complete; and 7) provide a transition period for the implementation of any new rules. We invite comment and suggestions on these proposals and on certain additional issues related to compliance with RF guidelines. If alternatives are suggested, they should be justified with detailed documentation, data or observations relevant to potential human exposure from RF emissions.

II. BACKGROUND

2. The National Environmental Policy Act of 1969 (NEPA) requires agencies of the Federal Government to evaluate the effects of their actions on the quality of the human environment.¹ To meet its responsibilities under NEPA, the Commission has adopted requirements for evaluating the environmental impact of its actions. One of several environmental factors addressed by these requirements is human exposure to RF energy emitted by FCC-regulated transmitters and facilities.²

¹ National Environmental Policy Act of 1969, as amended, 42 U.S.C. §§ 4321-4335.

² See 47 CFR § 1.1307(b).
(continued...)

3. In its 1996 *Report and Order* and its 1997 *Second Memorandum Opinion and Order* in ET Docket 93-62,³ the Commission established guidelines for evaluating the environmental effects of radiofrequency radiation. These guidelines include limits for Maximum Permissible Exposure (MPE) to RF radiation, including limits for both whole-body and partial-body exposures, based on criteria published by the National Council on Radiation Protection and Measurements (NCRP) and by the American National Standards Institute/Institute of Electrical and Electronics Engineers, Inc. (ANSI/IEEE). The *Report and Order* also modified the Commission's policy on categorical exclusions, which relieve certain radio services and transmitters from requirements for routine environmental evaluation for RF exposure.

4. Since adoption and implementation of these guidelines, it has become apparent that additional transmitters and devices can be categorically excluded from routine evaluation for RF compliance, that some transmitters and devices are inappropriately excluded, and that certain exclusion criteria can be harmonized to govern similar facilities in different services. In addition, it appears that certain aspects of our rules may require revision to clarify the responsibilities of our licensees and grantees and to ensure compliance with the FCC limits in a more practical, consistent and efficient manner.

5. This Notice makes several proposals to accomplish these goals, and we are requesting comment on all of our proposals. These proposals are related only to the Commission's implementation of procedures for compliance with the adopted limits for human exposure from fixed, mobile and portable transmitters regulated by the Commission. This Notice does not invite comment regarding the exposure limits themselves, which have been developed in conjunction with other agencies and organizations that have primary expertise in health and safety.⁴

III. PROPOSED REVISIONS

A. Routine Evaluation and Categorical Exclusion of Transmitters, Facilities and Operations

6. The Commission's environmental rules identify particular categories of existing or proposed transmitting facilities for which licensees and applicants are required to conduct routine environmental evaluation to determine whether these facilities comply with our RF guidelines. All other transmitting facilities are "categorically excluded" from requirements for

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³ *Report and Order*, ET Docket 93-62 (Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation), 11 FCC Rcd 15123 (1996); *Second Memorandum Opinion and Order and Notice of Proposed Rule Making*, ET Docket 93-62 (WT Docket 97-192), 12 FCC Rcd 13494 (1997).

⁴ We note that a petition for rule making to revise our RF exposure guidelines was dismissed in 2001. Letter from Bruce A. Franca, Acting Chief of the Commission's Office of Engineering and Technology, to James R. Hobson, EMR Network, December 11, 2001. A petition for reconsideration of that dismissal is pending.

conducting such routine evaluations because we have found that they offer negligible potential for causing exposures in excess of our guidelines based on factors such as operating power and human accessibility. Accessibility is usually related to such factors as the height above ground of an antenna or whether an antenna is mounted on a tower or on a rooftop. After several years of experience in analyzing RF exposure potential from various sources, we now believe that certain modifications are needed to make our RF exposure rules more consistent across service categories, to ensure that RF exposure evaluations are not required in circumstances where there is no risk of harmful exposure, and to ensure that the potential for exposure is not overlooked in certain cases where there may be some risk of RF exposure at levels that exceed our guidelines.

7. In this regard, we believe that the current environmental rules are inconsistent with regard to the treatment of accessibility or separation distance for certain fixed transmitting facilities.⁵ In some instances, transmitter powers and separation distances are specified and in others only power levels are specified. For example, the factors currently determining whether cellular and broadband PCS base station antennas are subject to routine evaluation or are categorically excluded from evaluation are different dependent upon whether the transmitting antenna is located on a tower or mounted on a building such as on a rooftop. In the case of tower-mounted cellular transmitting antennas, evaluation of RF exposure is currently required only if the height above ground is less than 10 meters *and* the total transmitter power is greater than 1000 watts effective radiated power (ERP). On the other hand, for building-mounted cellular transmitting antennas, evaluation is now required whenever the total transmitter power exceeds 1000 watts (ERP), regardless of height above ground or separation distance from publicly accessible areas. The requirements for broadband PCS are similar except that the power level is 2000 watts (ERP) due to the difference in allowed exposure limits for PCS frequencies.

8. We believe that it is important to consider both total transmitter power and separation distance in our RF exposure requirements and exclusions. Proximity is a significant factor in determining whether exposures could occur in excess of our guidelines. We note that public access may be more likely in the immediate vicinity of building-mounted and roof-top antennas than for tower-mounted antennas. We therefore now believe that it is important to include separation distance criteria in our rules for all transmitting antennas, including building-mounted antennas. We also propose to change the current "height above ground" requirement to a more general separation distance requirement. We tentatively find that the current "height above ground" separation requirement may not be appropriate in all cases since it does not take into account accessible locations that may be adjacent to the transmitting antenna, such as where a tower-mounted antenna is installed next to a building. While such facilities may not be typical, we are concerned that these situations could present a potential for public exposure to RF emissions and should not be categorically excluded from evaluation.

⁵ In this context, we are using the term "fixed" to refer to those transmitters referenced in Table 1 of 47 CFR §1.1307(b) that are not considered "mobile" or "portable" as defined in 47 CFR §2.1091 and §2.1093. This definition includes transmitters that are physically secured at one location on a temporary basis. An example of such a case would be a mobile wireless base station used to accommodate increased call volume at a special event.

9. We are also concerned that the current separation distances and power levels contained in the rules to trigger routine evaluation may not be appropriate in all situations. Under the current requirements, a cellular transmitting facility with a transmitting antenna less than 10 meters high would be categorically excluded and not subject to routine evaluation for RF exposure even if it operates at power levels that approach the threshold levels for routine RF evaluation, for example, 999 watts. Such exclusion does not appear warranted, and we propose to amend our rules to eliminate this situation by providing for a conservative range of power and separation distances, as further detailed below.

10. Finally, we believe that requirements for routine evaluation and categorical exclusion should be more consistent across services. We note that the current rules in some instances are inconsistent with regard to the treatment of certain services with similar operating and exposure characteristics. For example, the rules require routine evaluation in the case of broadband PCS if the total power is more than 2000 watts (ERP) (3280 watts EIRP). Other services that operate in frequency bands above 1.5 GHz where the RF guidelines are similar to those for PCS, such as the Wireless Communications Service at 2.3 GHz, are subject to routine evaluation if the total power is more than 1640 watts EIRP.⁶ We believe that the requirements for routine evaluation and categorical exclusion should be consistent across similar services and that, as proposed below, the same power levels and separation distances should apply.

11. We are proposing to amend the rules for required routine evaluations and categorical exclusions for fixed antennas to address the above concerns. First, we propose that routine evaluation would be required for fixed transmitting facilities where the separation distance from publicly accessible areas is less than 3 meters, regardless of operating frequency or power, with the exception of transmitters in the categories discussed below in paragraph 14. Second, we propose that routine evaluation would be required for facilities where the separation distance from publicly accessible areas is less than 10 meters and the transmitting power is 100 watts ERP or greater for services operating at frequencies below 1.5 GHz or 200 watts ERP or greater for services operating at frequencies at 1.5 GHz and above. Third, we propose that fixed transmitting facilities be categorically excluded from routine evaluation if the separation distance to publicly accessible areas is 10 meters or greater. The above proposed separation distances and power levels were derived taking into account the current RF safety guidelines and the technical rules governing the affected transmitting facilities contained in the Commission's rules. Separation distance in this context is defined as the minimum distance from the radiating structure of the transmitting antenna in any direction to any area that is accessible to a worker or to a member of the general public. These proposed changes would apply to transmitting facilities in the Multipoint Distribution Service (Subpart K of Part 21), the Cellular Radiotelephone Service (Subpart H of Part 22), the Paging and Radiotelephone Service (Subpart E of Part 22), the Personal Communications Services (Part 24), the Wireless

⁶ In addition, we note that the present rules include reference to categories in the General Wireless Communications Service (GWCS) operating at 4.6 GHz. However, this service is no longer authorized, and we are proposing to delete all references to this service from 47 CFR §1.1307(b) as well as from 47 CFR §2.1091 and §2.1093 (the rule parts dealing with compliance with mobile and portable devices). Also, in this regard, a recent Commission decision also requires evaluation of mobile and portable devices operating in the 4.9 GHz band (see *Memorandum Opinion and Order and Third Report and Order*, WT Docket 00-32).

Communications Service (Part 27), the Experimental, Auxiliary, and Special Broadcast and Other Program Distributional Services (Subpart I of Part 74), the Private Land Mobile Radio Services Paging Operations (Part 90), the Private Land Mobile Radio Services Specialized Mobile Radio (Part 90), the Local Multipoint Distribution Service (Subpart L of Part 101), and the 24 GHz Service and Digital Electronic Message Service (Subpart G of Part 101). We also propose to apply these requirements to terrestrial repeater stations in the Satellite Digital Audio Radio Service (SDARS) authorized under Part 25. The proposed changes to Section 1.1307(b), Table 1, are shown in Appendix A.

12. For transmitters authorized under the Experimental Radio Service (Part 5) and under Subparts A, G, and L of Part 74, the rules currently require routine evaluation whenever the operating power of the transmitting facility is greater than 100 W ERP (164 W EIRP).⁷ To ensure that categorically excluded transmitters operating at less than this power level do not pose a risk of causing exposures exceeding our limits, we are proposing to add a separation criterion to the rules for these transmitters. The most restrictive limit for general population/uncontrolled exposure to RF energy is 0.2 mW/cm^2 in the frequency band of 30 MHz – 300 MHz. Theoretical calculations indicate that this exposure level could be exceeded within a radius of approximately 2 to 3 meters for a 100 W ERP (164 W EIRP) transmitter. In the interest of simplicity and practicality in determining categorical exclusions for these services, we propose to revise the categorical exclusions for Part 5 and Part 74 (Subparts A, G and L) to specify that routine evaluation is required if radiated power is 100 W ERP (164 W EIRP) or more *or* if members of the general public can approach the radiating structure of the antenna at a distance closer than 3 meters. So if the separation distance is 3 meters or more, and the radiated power is less than 100 W ERP, a transmitter would be categorically excluded from routine evaluation under this proposed rule. We seek comment on this separation distance, and on whether multiple, frequency-dependent separation distances should be introduced into our rules for these services. Parties proposing alternative or multiple separation distances should provide the analytical basis for their propositions.

13. In the case of operations governed by Part 25 (Satellite Communications), Part 73 (Radio Broadcast Services) and Part 80 (Stations in the Maritime Services - "ship earth stations" only), such facilities are now subject to routine evaluation for compliance with the exposure limits. With the exception of Part 73, Subpart G, which governs low power FM (LPFM) broadcast stations, we propose to leave these requirements unchanged at this time, in view of the generally high power levels of Part 73 facilities and the high gain antennas and potential for proximity for Part 25 transmitters and Part 80 ship earth station transmitters. Commenting parties may address, however, whether we should provide for some categorical exclusion for these facilities and under what circumstances exclusions should be provided. Such comments should include the analytical basis for any specific proposal. Because LPFM stations operate at power levels that cannot exceed 100 watts ERP, we propose a categorical exclusion threshold for these stations in cases where a separation distance of 3 meters is maintained. We seek

⁷ 47 CFR § 1.1307(b) Table 1.

comment on this proposed exclusion for LPFM stations, including whether we should adopt a separate distance criterion for 10 watt LPFM stations.

14. The above proposals would require routine evaluation of transmitters that operate within 3 meters of publicly accessible areas. However, we believe it is appropriate also to consider establishing a categorical exclusion for certain very low-power fixed transmitters, such as indoor "micro" base stations and similar fixed devices. This exclusion would avoid unnecessary evaluation of such transmitters under the general rule for transmitters operating within 3 meters of publicly accessible areas. Accordingly, for devices mounted in such a way that persons are normally not closer than 20 cm from any part of the radiating structure, we are proposing a power threshold for categorical exclusion of 1.5 W ERP for transmitters operating at frequencies at or below 1.5 GHz and 3 W ERP for fixed transmitters operating at frequencies above 1.5 GHz. These values are consistent with the power exclusion thresholds we already have in place for mobile devices.⁸ Transmitters operating below these levels would not be subject to routine evaluation to determine compliance with our RF exposure limits.

15. We believe that these proposals will ensure that our RF exposure rules and categorical exclusions are more consistently applied across all service categories. The proposed changes attempt to strike an appropriate balance of eliminating RF exposure evaluations in circumstances where there is little risk of harmful exposure, and ensuring that evaluations are carried out and that the potential for exposure is not overlooked in cases where there may be some risk of RF exposure at levels that exceed our guidelines. We recognize that the above separation distances and power limits were developed using conservative assumptions and that the use of these power levels and distance criteria could result in the requirement for routine evaluation of some installations that are unlikely to exceed the RF exposure guidelines. We tentatively believe that the advantages in simplicity and certainty of this approach outweigh the requirement to conduct these additional evaluations. We seek comment on the power and distance criteria we are proposing, and on whether a different formulation should be used for determining categorical exclusion criteria. Another approach could be to provide a series of power exclusion thresholds for different separation distances, *e.g.*, a power threshold for each meter between 3 and 10 meters, or to specify a formula that relates distance to operating power, based on the appropriate power density exposure level for a particular service or frequency.⁹ We also are aware that licensees in some services either are currently offering or intend to offer in the near future fixed wireless services for which customers may self-install subscriber-end transceivers.¹⁰ We seek comment on how best to apply the above parameters in these instances.

⁸ These values are based on conservative calculations for exceeding the FCC's limits for maximum permissible exposure (MPE) at a distance of 20 cm. *See* 47 CFR § 2.1091(c). Mobile devices are transmitting devices designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between a transmitter's radiating structure and the body of the user or nearby persons. *See* 47 CFR § 2.1091(b).

⁹ For example, for the cellular radio band, power and distance criteria for categorical exclusion could be based on calculations using a far-field equation. This would result in a formulation relating distance to the square root of the total radiated power.

¹⁰ For example, such offerings are being considered in the WCS, MDS/ITFS, cellular, and PCS services (*see Notice* (continued...))

including whether labeling¹¹ may be considered sufficient to ensure compliance with distance separation requirements, and on whether other approaches may be more appropriate.

16. We also note that where routine evaluation would be required under our proposals, this evaluation would need to consist of only what is necessary to verify that the RF exposure guidelines will not be exceeded. For example, where a directional antenna with maximum power of 100 W ERP or greater is publicly accessible within 10 meters only from outside of the main beam of the antenna, and therefore would expose the public to little or no RF emissions, routine evaluation may consist of no more than verification of this fact. Another alternative would be to write the rule in a manner that categorically excludes antennas that are publicly accessible within the specified distance only outside the main beam. We believe that this alternative would result in a more complicated rule and little, if any, reduced burden on private parties. We seek comment on this analysis.

B. Requirements for Evaluating SAR for Certain Section 15.247 Unlicensed Devices

17. Section 15.247 contains the rules governing the use of spread spectrum transmitters operating in the 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz bands. These unlicensed devices can generally operate at higher power levels than other unlicensed Part 15 devices because they employ spread spectrum technologies that “spread” the energy over a wider bandwidth, thereby reducing the potential for interference. These devices may operate at up to maximum peak output power levels of between 0.125 and 1 watt, depending on frequency and transmitter characteristics.¹² Typical devices authorized under Section 15.247 of the rules include cordless telephones, wireless local area network devices, and wireless computer peripherals. Under our current rules, routine RF exposure evaluation of Specific Absorption Rate (SAR) is not required for devices authorized under Section 15.247. However, the rules do require that these devices be operated in a manner that ensures that the public is not exposed to RF energy in excess of our exposure limits.¹³

18. Given the power levels permitted under Section 15.247, we are concerned that some higher powered Section 15.247 devices, in particular those portable devices that are designed to be used close to a user’s body while in operation, such as a cordless telephone, may have a potential for exceeding our SAR guideline limit and therefore should be subject to routine RF evaluation. Accordingly, we propose to require SAR evaluation of consumer devices that are authorized under Section 15.247, and designed for use within 20 cm of the body, if the maximum peak output

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of Proposed Rule Making, WT Docket 03-66).

¹¹ For a discussion of labeling requirements, see Section III. G. *infra*.

¹² Devices authorized under 47 CFR §15.247 may transmit with up to 1.0 W peak (conducted) output power as allowed by our rules, although most devices authorized to date operate with less power.

¹³ 47 CFR § 15.247(b)(4). Specific Absorption Rate (SAR) limits are defined in §1.1310 and §2.1093 of our rules.

power of the device exceeds 100 milliwatts (mW). The 100 mW value is based on our evaluation of those portable devices for which SAR data has been required or requested to be submitted. Specifically, for several years, we have required that cellular telephones and PCS devices be evaluated for SAR, and we have recently examined SAR data from a small sample of devices authorized under Section 15.247 that operate in the 900 MHz and 2400 MHz bands. All of these data suggest that if peak power levels are at or below 100 mW, it would be unlikely that the device would exceed our SAR limit of 1.6 W/kg for consumer devices. We only have limited SAR data for devices at 5.8 GHz and request comment on whether 100 mW or some other value should be used for Section 15.247 unlicensed portable devices that operate at 5 GHz. We believe that this approach will ensure that the public is not exposed in excess of our SAR limits for portable devices authorized under Section 15.247 of the rules.

C. RF Evaluation Requirements for Transmitter Modules

19. An increasingly important issue with respect to evaluating RF exposure devices concerns modular RF emitters ("transmitter modules") designed to be used in "host" products or in combination with other RF devices. These transmitter modules are increasingly being designed for installation in a variety of consumer electronic products, either as add-on features by the manufacturer or as after-market accessories to be installed by the consumer. Such transmitters are used to provide, for example, wireless headset (speaker and headphone) connections to PCS and cellular radiotelephones; wireless connections to local area networks (LANs) for desktop and laptop computers; and wireless connections to service provider networks for personal digital assistants (PDAs) and other devices. The current Commission requirements and general policies for authorization of Part 15 unlicensed, low-power transmitter modules are described in Public Notice DA 00-1407.¹⁴ However, RF exposure compliance procedures are not described in that Public Notice, and we have received numerous inquiries regarding the requirements for determining compliance with our RF exposure guidelines for these devices.

20. The utility and flexibility of use of such transmitter modules would be greatly reduced if an individual certification were needed for each different use of a given module, particularly in situations where a module or its installation presents no meaningful potential for exposure in excess of our guidelines. We also recognize that manufacturers appear particularly interested regarding parameters under which a module may be approved on a "host-independent" basis, that is, so that it can be used in many different devices without subjecting these devices to new or additional RF exposure evaluation. Accordingly, we seek to gather information aimed at providing rules and guidelines for the approval and safe use of modular transmitters with a minimum of regulatory burden.

General Requirements for Transmitter Modules

21. We propose to base our requirements for evaluation and categorical exclusion of transmitter modules on the power levels of the modules, combined with the installation configurations and situations for which they would be used. While we recognize the benefits of

¹⁴ Public Notice (DA 00-1407), 15 FCC Red 25,415 (2000).

modular transmitter design and do not wish to discourage its use or impose unnecessary regulatory burdens on manufacturers. We also remain cognizant of our responsibility to ensure that the public is not exposed to RF energy in excess of our guidelines. In general, we propose to permit the authorization of transmitter modules where they comport with our categorical exclusion requirements or where they have been measured and shown to comply with the RF guidelines and it can be shown that the use of the modular transmitter in additional "host" devices would not result in noncompliance. For example, we would propose to authorize any Section 15.247 unlicensed device as a "transmitter module" provided that the operating configurations and exposure conditions of the host products are identified and the maximum peak conducted output power is 100 mW or less. When a module is approved for any host product configurations and exposure conditions, a host may incorporate multiple modules for simultaneous transmission without additional approval. Since RF energy absorption is frequency dependent, we seek comment on whether the proposed 100 mW threshold is suitable for ensuring compliance at all frequencies. We would also permit transmitters that have been successfully evaluated for compliance to be certified as a Part 15 transmitter module provided it can be shown that compliance can be maintained in any intended application of the transmitter. In this regard, we request comment on what factors should be included in ensuring compliance of the transmitter module in various host devices. For example, we seek comment on whether we should require measurements in a certain number of typical host devices or whether we should condition grant to configurations where the host device is physically similar. Another approach would be to permit the use of approved modules in additional "host" devices under our permissive change rules. For example, a module authorized for operation in a particular host device could be approved for operation in another host as a Class I Permissive Change if the measured SAR values for the module are the same or less when operating in the new host device.¹⁵ Since no filing with the Commission is required for a Class I Permissive Change, such an approach would allow manufacturers to add additional host devices without having to go through lengthy and unnecessary filings and approvals. We seek comment on this option, and on whether we should instead permit such modification only by a Class II Permissive Change, which requires prior approval.¹⁶ We also seek comment on what information should be included in the installation instructions provided with the transmitter module such as minimum separation distances, antenna requirements, etc.

Requirements for "Host-Independent" Transmitter Modules

22. We also believe that developing requirements for permitting transmitter modules in any host device would provide benefits to manufacturers and consumers. At the same time, we recognize that different categories of "host" devices have significantly different operating characteristics that would affect RF compliance evaluation and should be taken into account. We therefore propose to permit host-independent transmitter modules within three broad categories.

¹⁵ See 47 C.F.R. § 2.1043 for description of permissive changes.

¹⁶ We note that Class 2 permissive changes can be authorized by Telecommunications Certification Bodies, typically in a matter of days.

23. *Radiotelephones.* For radiotelephones, pagers, and other devices that are used in close proximity to the head or body, we propose that SAR evaluation should not be required subsequent to the addition of any modular transmitter that operates at or below 2 mW (peak radiated or conducted output power). We believe that the addition of such very low power modular transmitters to hand-held phones or devices is unlikely to contribute significantly to the overall SAR level of a device and thus not affect its compliance. Under this proposal, for example, a Bluetooth module could be added to a compliant cellular or PCS phone without the need for re-evaluation or recertification. We seek comment on the applicability of the proposed 2 mW limit across all frequencies. We also seek comment on whether there should be a limit on the number of such modular transmitters that can be added to a compliant hand-held phone or device before a re-evaluation is appropriate.

24. For modular transmitters operating at power levels above 2 mW in a hand-held phone, pager or similar device, we propose that they be evaluated in combination with the host device. If the combination is demonstrated to be in compliance with the SAR limit, we propose that such a demonstration of compliance can then be applied to such modules in similar host devices that have been tested and certified for similar configurations. We seek comment on how to appropriately define such an authorization. We also seek comment on whether the permissible power of a module to be added to a hand-held phone without requiring recertification should be tied to the pre-existing SAR level of the host phone model.

25. *Laptop (Notebook) Computers.* The likelihood of RF exposure due to direct contact with the body is less for laptop portable computers than for hand-held phones, since there is usually some additional space between the transmitting elements and the body. Moreover, the exposure potential varies appreciably depending on the location of the transmit antenna within the computer. Transmit antennas located within the keyboard portion of a laptop have the capacity to be operated close to the body, whereas antennas located on the screen portion can be 20 cm or more distant from any part of the body. As discussed below, we believe that rules should reflect these differences.

26. For transmitting modules that may be added to the keyboard section of a laptop computer, we believe it is unlikely that the SAR level of the combined device would change significantly as long as the peak conducted or radiated power is no more than 10 mW. The available power from such a modular transmitter we believe would be too low to cause significant energy deposition in the body. It is also unlikely, in general, that the transmitter's power would be misdirected toward the body, because this would adversely affect the functionality and operability of the device. Therefore, we propose that any modular RF transmitter designed to be used in the keyboard portion of a laptop computer need not undergo RF exposure analysis if it operates at less than 10 mW (peak radiated power). We also seek comment on whether there should be a limit on the number of such modules or other transmitters that can be added to a laptop computer before evaluation is required.

27. For transmitting modules where the radiating element is to be mounted in the screen portion of a laptop, we believe that the power threshold level for evaluation can be considerably

higher. Accordingly, we propose that for radiators mounted in laptops such that the radiating element will be more than 20 cm from the user's body,¹⁷ a power level up to 200 mW be permitted without requiring an RF evaluation.¹⁸ We believe that such a transmitter can be added to any laptop without raising an issue related to compliance with our limits for RF exposure. We request comment on whether these power thresholds are appropriate at all frequencies and in all laptop applications, and whether there should be some limit on the number of such modules that can be incorporated into a laptop without concern for RF exposure in excess of our limits.

28. *Personal Digital Assistants (PDAs) and Similar Hand-held Devices.* The potential for exposure from modular RF transmitters used in personal digital assistants (PDAs) raises issues similar to those associated with exposure from modules in portable computers and hand-held phones. One significant difference, however, is that today's PDAs are most often used as hand-held devices, not immediately next to the torso of the human body. While the partial-body SAR limit for the head and most of the body is 1.6 W/kg averaged over one gram of tissue, the SAR limit for the extremities, such as the hands, is 4.0 W/kg averaged over ten grams. This means that if a PDA is used exclusively as a hand-held device, evaluation of exposure to the head and other parts of the body is not relevant and the higher exposure limit for extremities applies. However, we are aware that at least some PDAs can be used in the transmit mode while worn on the body, and some have been approved for use as hand-held phones. In those cases, the more restrictive limit of 1.6 W/kg would apply.

29. Accordingly, for transmitting modules that are to be incorporated into a PDA, we propose to use a threshold value of 25 mW as an exclusion threshold for requiring SAR evaluation of hand-held PDAs. This value is two and one-half times the value we proposed for modules in the keyboard section of laptop computers, recognizing that the exposure limit for extremities is two and one-half times the body limit. This limit would apply only if the PDA is used exclusively as a hand-held device.

30. For PDAs that are designed to be used in contact with the head or worn against the body, we propose to use the same 2 mW threshold for additional transmitting modules that we are proposing for modules used in mobile phones. We request comment on whether our approach proposed for PDAs is reasonable, and whether we can distinguish treatment according to the functionality of a particular PDA. We seek comment on whether higher power thresholds might be warranted for SAR evaluation on the basis of extremity exposure. If such proposals are made, we seek comment on appropriate power levels, and any conditions that should be placed on the configuration of PDAs.

¹⁷ This criterion is based on how the Commission distinguishes between "mobile" and "portable" devices for purposes of RF exposure evaluation. Mobile devices are defined as those designed to be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. Portable devices are defined as those designed to be used with separation distances of less than 20 cm. See 47 C.F.R. §§2.1091 and 2.1093.

¹⁸ We recognize that this power level is different from those power thresholds currently in effect for categorical exclusion of mobile devices from routine evaluation (see 47 CFR §2.1091(c)). However, the existing thresholds were designed for "stand alone" mobile transmitters. The proposed power level would apply to situations where the possible presence of multiple modular transmitters, such as in a laptop computer, suggests that a more conservative power threshold would be needed.

D. Measurement of SAR from Multiple Transmitters

31. Questions have been raised with regard to the procedures for SAR evaluation in devices with multiple transmitters. We first note that when multiple RF transmitters operate *simultaneously in a device, they typically use different frequencies*. For example, a laptop computer may contain Bluetooth or other transmitters. Evaluation of compliance for such devices is dependent on the specific transmitter frequency.¹⁹ Laboratory SAR measurement techniques require the dielectric properties of tissue-simulating media to follow the same frequency-dependency to correctly measure the SAR. Transmitters operating at different frequencies cannot be evaluated simultaneously, because existing test systems (tissue-simulating media and field probe calibration) can only be configured for a limited frequency range for each measurement. The tissue-simulating liquid used in the head or body model must be changed, depending on the frequency, to accurately reflect the RF energy absorbed by body tissue in that frequency range. As a result, devices with multiple transmitters operating at widely varying frequencies must be evaluated one transmitter at a time.

32. One convenient way to evaluate the SAR of a single device with multiple transmitters using present measurement systems is to add together the SAR values individually obtained for each transmitter in order to estimate the total SAR for a given device. This, however, may overestimate RF exposure if different transmitters generate their maximum exposure at different locations in the body. Since this issue has not been extensively addressed elsewhere, we seek to establish guidelines for evaluating SAR for such devices. In the absence of a better predictive model, we propose to specify that the maximum RF exposure levels of all multiple antennas within a single portable or mobile device that could functionally transmit at the same time be added together in order to determine RF exposure values for the device. We also seek comment on whether it would be appropriate and practical with present SAR measurement systems to sum the SAR values at individual evaluation grid points prior to computing the 1-g average SAR, as opposed to simply summing the 1-g averaged SAR values of each transmitter. We request that commenting parties provide detailed information and supporting documentation regarding any proposals for measuring RF exposure from multiple-transmitter devices. We also are interested in whether transmitters operating simultaneously in close proximity to each other could affect the RF exposure characteristics of each other in a way that might not be reflected in the SAR levels of each transmitter when operating and evaluated independently. We seek comment on the prevalence and predictability of this potential phenomenon.

E. Reference to OET Bulletin 65

33. For purposes of evaluating compliance with the guidelines for localized exposure measured by SAR, the Commission's rules require that portable devices are to be tested or

¹⁹ See Supplement C to OET Bulletin 65.

evaluated based on technically acceptable protocols, procedures and standards.²⁰ Specific guidance on acceptable procedures is provided in a supplement to the FCC's OET Bulletin 65 ("*Supplement C*").²¹ Supplement C provides specific direction as to the procedures that are appropriate for analysis of SAR from wireless handsets. The procedures set forth therein are intended to generally reflect procedures for SAR analysis for hand-held phones being developed by a committee of the Institute of Electrical and Electronics Engineers, Inc., (IEEE).²² Staff from both the FCC and the U.S. Food and Drug Administration (FDA) have been active participants on this committee, and this IEEE recommended practice will represent several years of work by the world's leading experts in this field.

34. To avoid confusion as to what constitutes acceptable procedures for evaluating SAR for portable devices, we are proposing to revise our rules addressing this matter, so that they no longer refer to a specific document, which can become outdated. Rather, we propose to include a more generic reference to Supplement C in the rules, so that as SAR evaluation guidelines are refined by experts, they can be accommodated more quickly by our procedures without waiting for rule amendment. Accordingly, for portable devices, we propose to delete the sentence in Section 2.1093(d)(3) of our rules that refers to IEEE standard C95.3-1991 and refer instead to the most current edition of *Supplement C to OET Bulletin 65*, issued by the Commission's Office of Engineering and Technology.²³ For mobile devices, we propose to add a similar reference to Bulletin 65 in the introductory text of Section 2.1091(d). In addition, we propose to amend Section 2.1093 to indicate that computational modeling may be used to demonstrate compliance with the SAR limits only if supported by adequate documentation. This is consistent with section 1.1307(b)(2) of our rules, which provides the Commission with the discretion to request SAR measurement data when a compliance showing is based on computational modeling. We invite comment on these proposals.

35. In a related development, we note that another committee of the IEEE, Subcommittee 4 of Standards Coordinating Committee 28 (SCC28), has adopted a revised SAR limit that would apply to the "pinna" of the human ear.²⁴ This revised SAR limit is directly relevant to the

²⁰ 47 CFR § 2.1093(d).

²¹ *Supplement C to OET Bulletin 65*, first edition (97-01) released August 25, 1997, revised edition (01-01) released June 29, 2001. This document can be downloaded from the Commission's website in either MS Word or Adobe Acrobat .pdf format at: www.fcc.gov/oet/rfsafety.

²² IEEE Standards Coordinating Committee 34 (SCC34), Subcommittee 2, DRAFT *Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques*. IEEE Standard 1528-200X.

²³ Once the IEEE SCC34 recommended practice for SAR evaluation is completed and officially issued by the IEEE, we expect to consider whether to adopt it, by reference, as the standard practice required for evaluating compliance with the FCC's SAR limits in conjunction with our *Supplement C*. However, the IEEE standard has not yet been officially released by the IEEE.

²⁴ The pinna is the projecting portion of the external human ear. The revision revises the SAR limit for this part of the body by subjecting it to the relaxed SAR limits applied by the IEEE to parts of the body classified as "extremities."

(continued...)

evaluation of SAR in the human head from hand-held mobile phones. Therefore, we expect to consider adopting this revised SAR limit once it is officially issued by the IEEE, since our current limits for localized SAR are based primarily on IEEE recommendations. Although we are not making a specific proposal at this time regarding this issue, we nevertheless invite comment on what consideration we should give to this revision.

F. Special Considerations for Occupational Use

36. The Commission's RF guidelines incorporate two tiers of exposure limits, one for the general public ("general population/uncontrolled" exposure) and another, less restrictive, tier of limits for workers ("occupational/controlled" exposures).²⁵ The occupational exposure limits are set well below the threshold considered by experts to be potentially harmful, but are higher than those for the general population. The difference in the acceptable exposure levels is based on the premise that workers are aware of their exposure and have the knowledge and means to effectively control their exposure and also on the greater potential for continuous exposure on the part of the public.

37. The occupational/controlled limits in our rules apply "in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure." The limits for occupational/controlled exposure also apply "in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure."²⁶ The general population/uncontrolled exposure limits apply "in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure."²⁷

38. To make it easier for our licensees and grantees to interpret their responsibilities, we propose to explain in a note to Section 1.1310 of our rules that "fully aware" means that an exposed individual has received written and verbal information concerning the potential for RF exposure and has received training regarding appropriate work practices relating to controlling or mitigating his or her exposure. As specified in the rules, transient individuals must simply be made aware of their exposure. This could be achieved by means of written and/or verbal information, including, for instance, appropriate signage. We propose to specify that "exercise control" means that an exposed individual is able to reduce or avoid exposure by administrative

(Continued from previous page) _____

²⁵ See 47 CFR §§1.1310, 2.1091, 2.1093.

²⁶ 47 CFR § 1.1310 Table 1 Note 1.

²⁷ 47 CFR § 1.1310 Table 1 Note 2.

or engineering work practices, such as use of personal protective equipment or time-averaging of exposure.²⁸

39. With respect to fixed transmitters, we have found in implementing our RF exposure guidelines over the past several years that in some cases licensees have failed to take note of the fact that they are responsible for compliance with both the occupational/controlled limits as well as the general population/uncontrolled limits. Some licensees have determined, by calculations or by other means, that they comply with the limits for the general public and have then assumed that they are fully compliant with our exposure limits or otherwise categorically excluded from further action. In these cases, licensees have often not considered their responsibilities to ensure compliance for workers who may have access to areas in closer proximity to antenna sites. We propose to add the following language to Section 1.1310 of our rules, as a reminder of this obligation: "Licensees and applicants are generally responsible for compliance with *both* the occupational/controlled exposure limits and the general population/uncontrolled exposure limits in Table 1 as they apply to transmitters under their jurisdiction. Licensees and applicants should be aware that the occupational/controlled exposure limits apply especially in situations where workers may have access to areas in very close proximity to antennas where access to the general public may be restricted."

40. With respect to portable and mobile devices, we are proposing that labels may be used to satisfy the requirements for making workers aware of the potential for exposure. We note that the Telecommunications Industry Association (TIA) is developing labeling guidelines for manufacturers to follow in this regard.²⁹ Consistent with TIA's efforts, we are proposing to allow a label to be used to fulfill the requirement for making workers aware of the potential for exposure. The label must indicate that the device is for occupational use only, refer the user to specific information on RF exposure (*e.g.*, in a user manual), and note that the label and its information is required for FCC RF exposure compliance. The rules would also state that the label must be legible and clearly visible to a user. We further propose to require that the instructional material provide the user with information on how to use the device in such a way as to ensure compliance with the applicable occupational/controlled limit, *e.g.*, instructions as to proper device position, duty factor requirements, proper use of accessories, *etc.* We are proposing that a sample of the label, illustrating its location on the device, and the accompanying instructional material be filed with the Commission along with the application for equipment authorization. We propose to modify Sections 2.1091(d)(3) and 2.1093(d)(1) accordingly, and we invite comment on these proposals.

²⁸ For purposes of developing training programs for employees, we note that several resources are becoming available to provide guidance on appropriate RF safety programs. These resources include services provided by commercial vendors as well as information available through governmental and other Internet Web sites. Furthermore, a committee of the IEEE, Subcommittee 2 of Standards Coordinating Committee 28, is now in the process of drafting an IEEE Recommended Practice for the development of an RF safety program. IEEE SCC28, SC2.

²⁹ TSB-133 Draft, Telecommunications Industry Association.

G. Labeling Requirements for Consumer Products

41. The rules currently require labels for certain consumer products that use wireless technology advising users of RF exposure information. These labeling requirements apply to all subscriber transceiver antennas in the following services: Multipoint Distribution Service (Subpart K of Part 21), Experimental, Auxiliary, and Special Broadcast and Other Program Distributional Services (Subpart I of Part 74, ITFS only), Digital Electronic Message Service (24 GHz, Subpart G of Part 101) and Local Multipoint Distribution Service (Subpart L of Part 101). Licensees in these services are required to attach a label to subscriber transceiver antennas that: (1) provides adequate notice regarding potential radiofrequency safety hazards, *e.g.*, information regarding the safe minimum separation distance required between persons and transceiver antennas; and (2) references the applicable FCC-adopted limits for radiofrequency exposure specified in §1.1310 of the Rules.

42. We are not proposing to change the specifications of the information that must be provided on labels when they are required. We seek comment on whether there are conditions under which we could forgo labeling requirements, similar to the approach by which we provide categorical exclusions from our requirements for routine evaluation for RF exposure. Elsewhere in this Notice, we are inviting comment on whether a power threshold for routine evaluation of transmitters authorized under Section 15.247 that are designed with the potential to be closer than 20 cm from the body or from nearby persons should be 100 mW conducted or radiated peak power. For fixed transmitters that are designed to be at least 20 cm from users or nearby persons, we are proposing power thresholds of 1.5 W ERP for transmitters operating at or below 1.5 GHz and 3 W ERP for those operating at frequencies above 1.5 GHz. Accordingly, we propose to use these same criteria for triggering the labeling requirements for fixed consumer devices, and to apply the labeling requirements equivalently across all service categories for which labeling requirements currently apply (see para. 41, above).³⁰ We also propose a new labeling requirement for fixed consumer transceivers in the 39 GHz services governed by Part 101, Subpart C, which operate similarly to the other consumer devices affected by these rules. This would provide parties with relief from the labeling requirements where such labeling would not appear necessary. We also propose to not require labeling of such devices if the responsible party demonstrates by any appropriate means that MPE or SAR limits could not be exceeded regardless of distance from the antenna. We seek comment on the propriety of these criteria for each of these services, whether different criteria are appropriate for some services or some circumstances, and whether there are other services to which these or other labeling requirements should apply. For example, should these or other labeling requirements apply to cellular, PCS, and other CMRS licensees that choose to offer consumer-based fixed service? We also seek comment on whether the term "subscriber" adequately encompasses the potential users of such transceiver antennas.

43. In other actions where compliance of subscriber transceiver antennas with our RF exposure rules has been discussed, we have noted the desirability of having such antennas professionally installed in such a way as to minimize the likelihood of exposures in excess of our

³⁰ We believe that these power thresholds are conservative for typical applications such as the main-beam of a high-gain antenna, based on far-field theoretical calculations at a distance of 20 cm in the main transmitted beam.

safety limits, for example, by mounting antennas in relatively inaccessible areas.³¹ We also have encouraged the incorporation of safety “cut-off” devices in such antennas which would reduce power or shut down the transmitter when the transmitted beam was blocked, *e.g.*, by a child who would not be able to read a label.³² We have also noted that instructional materials should be provided to users and installers that advise as to safety precautions and minimum separation distances.³³ We have not made any of these measures mandatory by requiring them in our rules, and we are not proposing to do so at this time. We are uncertain of the costs of such measures in all cases, and whether there is sufficient increase in effectiveness over labeling to justify such costs in all cases.³⁴ We invite comment, however, on whether we should adopt additional mandatory requirements, such as those described above, for certain types of RF consumer products.

H. Compliance Evaluation Based on SAR Limits.

44. The Commission’s RF exposure guidelines are based on exposure criteria published by the National Council on Radiation Protection and Measurements (NCRP) and the Institute of Electrical and Electronics Engineers (IEEE).³⁵ Both the NCRP and the IEEE specify exposure criteria in terms of allowed levels for Specific Absorption Rate (SAR). In turn, reference levels for Maximum Permissible Exposure (MPE) were derived by the NCRP and the IEEE, based on the SAR limits. The MPE values are expressed in units of field strength and power density. Section 1.1310 of the Commission’s rules specifies the criteria to be used for evaluating compliance with the RF exposure guidelines. However, due to an oversight, Section 1.1310 directly refers only to the MPE values for field strength and power density, not the SAR values. This section should also specify the SAR values from which the MPE values were derived. This has become important because there may be instances when an applicant may wish to perform an SAR evaluation in lieu of determining power density or field strength, in particular in cases where the MPE values may be overly conservative. In such cases, applicants should be given the option of performing an SAR evaluation, if appropriate. Therefore, we propose to amend Section 1.1310 to reference the underlying whole-body and partial-body SAR values for

³¹ For example, *see Report and Order and Further Notice of Proposed Rule Making*, WT Docket No. 99-217, 15 FCC Rcd 22983, 23035-36 (2000).

³² *Id.*

³³ *Id.*

³⁴ The International Bureau has conditioned certain license authorizations for consumer premises satellite transmit terminals and required that such transmit terminals must be professionally installed. In addition, the Commission recently requested comment on whether professional installation should be required for consumer transmit terminals that operate in the Ku-band and are less than 1.2 meters in diameter or operate in the C-band and are less than 4.5 or 3.7 meters in diameter. *See, Further Notice of Proposed Rule Making*, IB Docket 00-248, (2000 Biennial Regulatory Review – Streamlining and Other Revisions of Part 25 of the Commission’s Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations), 17 FCC Rcd 18,585, (2002) at page 18,605.

³⁵ *See* 47 CFR §1.1310.

exposure criteria, and to allow for evaluation of SAR in lieu of power density or field strength evaluation for demonstrating compliance. We invite comment on this proposal.

I. Spatial Averaging for Evaluating Compliance

45. As currently discussed in OET Bulletin 65, compliance with the Commission's MPE limits for fixed antennas is generally based on the concept of "spatially averaging" power density or field strength squared, as recommended in IEEE and NCRP standards and publications.⁵⁶ However, there has been some confusion as to when spatial averaging is appropriate in situations where near-field exposures may exist or in areas where a power density or field strength level needs to be measured very close to an antenna.

46. There can be situations where a localized ("spatial peak") field intensity exceeds our MPE limits near an antenna where public or worker access is possible, while a spatially-averaged measurement over the area indicates compliance. It is possible that such localized "hot spots" could lead to SAR values in the body of a nearby person that exceed the partial-body value for SAR adopted by the FCC while not exceeding the whole-body limit. This can be relevant to exposures from both fixed antennas and antennas used for "mobile" devices, since our rules allow evaluation of exposure to mobile devices (as defined in our rules) in terms of field strength or power density. We seek comment on the best way to ensure compliance in such situations, other than requiring burdensome SAR evaluations for localized and/or whole-body SAR, which could be impractical and costly. Therefore, we seek comment on the issue of when spatial averaging of exposures is appropriate and how to deal with localized exposures in situations where spatial peak measurements may exceed the MPE limit values.

47. We also seek comment on procedures for determining whole-body spatial averaging. Current procedures involve averaging readings made in several positions relative to the RF source, including situations in which single emitters are present and those in which multiple emitters are present where no one RF source predominates. We seek comment on this approach, including whether using the maximum of such readings would be more appropriate. We also seek comment on such topics as the influence the body of the observer may have on the field being measured and the position of the body of the observer relative to the RF source. We are aware that several scanning protocols have been proposed for instruments that either allow automatic averaging or require measurements at specific points along a vertical line. Several studies have been carried out on this topic, but definitive guidance has not been generally available from the IEEE or other organizations, although this topic is discussed in the latest version of IEEE C95.1-1999. Therefore, we invite comment on whether the FCC should adopt or recommend a specific technique or procedure for whole-body spatial averaging to determine compliance with our exposure limits, and, if so, what technique or procedure should be adopted. Such guidance could be issued in the form of a Public Notice or could be incorporated into a new edition of OET Bulletin 65.

⁵⁶ See IEEE C95.1, 1999 Edition (Section 6.6); NCRP Report 119.

J. Medical Implant Communications Service.

48. The Medical Implant Communications Service (MICS) authorizes the use of medically implanted transmitters for providing diagnostic and therapeutic information about a patient to health care professionals.³⁷ We have been made aware of an inconsistency in our rules regarding requirements for MICS transmitters to comply with Commission guidelines on RF exposure. Section 95.603 (47 CFR §95.603) of the Commission's rules requires that applications for equipment authorization of devices operating under this section *must* include a report showing the results of computational modeling of patient exposure using finite difference time domain (FDTD) techniques. In addition, this rule part states that the Commission may also request the submission of measurement data for Specific Absorption Rate (SAR). On the other hand, Section 1.1307(b)(2) of the rules specifies that compliance may be demonstrated by *either* FDTD analysis *or* the submission of measurement SAR data, with the Commission retaining the option of requesting measurement data to support an FDTD analysis, if appropriate. The latter rule is the correct one. In other words, an applicant should have the option of demonstrating compliance by use of either computational techniques *or* by a laboratory measurement study. We therefore propose to revise Section 95.603 to make it consistent with Section 1.1307(b)(2). For completeness, we also propose to add identical language to Section 2.1093 (47 CFR §2.1093) dealing with compliance of portable devices.

K. Transition Period.

49. We recognize that a certain period of time will be needed by licensees and applicants to become familiar with any changes to our rules that could require additional routine evaluation for some previously categorically excluded transmitters and devices. We are proposing to provide a transition period of six months after any new rules are adopted in this proceeding before they become effective. We seek comment on the appropriate length of this transition period.

IV. PROCEDURAL MATTERS

50. As required by Section 603 of the Regulatory Flexibility Act, 5 U.S.C. § 603, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible economic impact on small entities of the policies and rules proposed in this document. The IRFA is set forth in Appendix C. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments filed in this *Notice of Proposed Rule Making* as set forth in paragraph 38, but they must have a separate and distinct heading designating them as responses to the IRFA.

51. This NPRM contains either a proposed or modified information collection. As part of its continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget (OMB) to take this opportunity to comment on the information

³⁷ 47 CFR §95.1201 et seq.

collections contained in this NPRM, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. Public and agency comments are due at the same time as other comments on this NPRM: OMB comments are due 60 days from date of publication of this NPRM in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

52. This is a permit-but-disclose notice and comment rule making proceeding. *Ex parte* presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in the Commission's rules. See generally 47 CFR §§ 1.1202, 1.1203, and 1.2306(a).

53. Pursuant to Sections 1.415 and 1.419 of the Commission's Rules, 47 CFR §§ 1.415 and 1.419, interested parties may file comments on or before [90 days from date of publication in the Federal Register] and reply comments on or before [120 days from date of publication in the Federal Register]. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS), <http://www.fcc.gov/e-file/ecfs.html>, or by filing paper copies. See *Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 24121 (1998).

54. Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers appear in the caption of this proceeding, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, U.S. Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form." A sample form and directions will be sent in reply. Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rule making number appear in the caption of this proceeding, commenters must submit two additional copies for each additional docket or rulemaking number.

55. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). The Commission's contractor, Vistrionix, Inc., will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, N.E., Suite 110, Washington, D.C. 20002.

-The filing hours at this location are 8:00 a.m. to 7:00 p.m.

-All hand deliveries must be held together with rubber bands or fasteners.

- Any envelopes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12th Street, SW, Washington, D.C. 20554.
- All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

56. Parties who choose to file by paper should also submit their comments on diskette. Such a submission should be on a 3.5-inch diskette formatted in an IBM compatible format using Microsoft Word or compatible software. The diskette should be accompanied by a cover letter and should be submitted in "read only" mode. The diskette should be clearly labeled with the commenter's name, proceeding (including the lead docket number), type of pleading (comment or reply comment), date of submission, and the name of the electronic file on the diskette. The label should also include the following phrase "Disk Copy – Not an Original." Each diskette should contain only one party's pleading, preferably in a single electronic file. In addition, commenters must send diskette copies to the Commission's copy contractor, Qualex International, 445 12th Street, S.W., Room CY-B402, Washington, D.C. 20554.

57. Alternative formats (computer diskette, large print, audio cassette and Braille) are available to persons with disabilities by contacting Brian Millin at (202) 418-7426, TTY (202) 418-4365, or via e-mail to bmillin@fcc.gov. This Notice of Proposed Rule Making can also be downloaded at <http://www.fcc.gov/oet>.

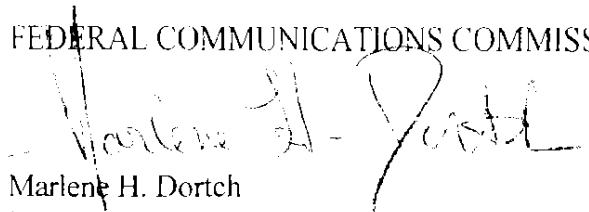
58. Written comments by the public on the proposed and/or modified information collections are due at the same time as comments on the NPRM. Written comments must be submitted by the Office of Management and Budget (OMB) on the proposed and/or modified information collections on or before [90 days after date of publication in the Federal Register]. In addition to filing comments with the Secretary, a copy of any comments on the information collection(s) contained herein should be submitted to Judy Boley, Federal Communications Commission, Room 1-C804, 445 12th Street, SW, Washington, D.C. 20554, or via the Internet to jboley@fcc.gov and to Kim Johnson, OMB Desk Officer, 10236 NEOB, 725 – 17th Street, N.W., Washington, D.C. 20503, or via the Internet to Kim_A._Johnson@omb.eop.gov (spaces in address are underscores).

59. Accordingly, IT IS ORDERED that pursuant to the authority contained in Sections 4(i), 301, 303(f), and 303 (r) of the Communications Act of 1934, as amended, 47 USC Sections 154(i), 301, 303(f), and 303(r), this Notice of Proposed Rule Making IS ADOPTED.

60. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this NPRM, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

61. For further information regarding this Notice of Proposed Rule Making, contact Robert F. Cleveland, Office of Engineering and Technology, (202) 418-2422, e-mail relevela@fcc.gov, or the Commission's RF Safety Program at (202) 418-2464 or rfsafety@fcc.gov.

FEDERAL COMMUNICATIONS COMMISSION



Marlene H. Dortch
Secretary